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Formative Assessment and Next-Generation Assessment Systems: Are We Losing an Opportunity?

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The Council of Chief State School Officers (CCSSO) is a nonpartisan, nationwide, nonprofit organization of public officials who head departments of elementary and secondary education in the states, the District of Columbia, the Department of Defense Education Activity, and five U.S. extra-state jurisdictions. CCSSO provides leadership, advocacy, and technical assistance on major educational issues. The Council seeks member consensus on major educational issues and expresses their views to civic and professional organizations, federal agencies, Congress, and the public.

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State Collaborative on Assessment and Student Standards (SCASS)

FAST SCASS works to expand the implementation of formative assessment in the classroom to positively impact teaching and learning.

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A project of Margaret Heritage and the Council of Chief State School Officers

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Foreword

All too often, the term “formative assessment” conjures images of quizzes and tests, while in reality, formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning. With this paper, the Council of Chief State School Officers seeks to illuminate and enrich the discussions around student assessment and help lead the development of more effective ways to assess student learning. These discussions focus on using the principles and best practices found in current educational research and effective educational systems in the U.S. and high-achieving nations around the world.

We are indebted to Margaret Heritage for developing and presenting this paper. Heritage describes why it is critical to make the distinction that formative assessment is not a tool, but a process true to the practice of effective teaching and learning. While this paper does not represent the official position of the Council, it is our hope that it will serve as a catalyst and resource for our ongoing conversations and planning.

The Council is engaged in a number of conversations with the states about the nature, and substance of the next generation of assessments aligned to the Common Core State Standards. States, through the two assessment consortia are working to develop richer assessments that provide a better understanding of student learning. As states work to transform their assessment systems, it is crucial that we keep teaching and learning at the center of this work.

We believe this paper can be a tremendous resource to states as they design new programs that will engage educators and learners in new and powerful ways. This direction rewrites the rules on assessing students from a top-down concept to a more inclusive engagement of educators and learners.

Gene Wilhoit, Executive Director
Council of Chief State School Officers

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Introduction

The Race to the Top (RTTT) Assessment Program has funded two state consortia to develop new assessment systems that measure student skills against a common set of college- and career-ready standards in mathematics and English language arts (U.S. Department of Education, 2010). The initial RTTT invitation to submit proposals prompted extensive discussion about a vision for next-generation assessment systems intended to play a critical role in supporting students to be college and career ready. To contribute to the vision, CCSSO published a white paper on comprehensive assessment systems to support high-quality learning. The paper called for assessment systems that supported multiple purposes at different levels of the educational enterprise and that included multiple forms of assessment, incorporating "formative as well as summative measures" (Darling-Hammond, 2010, p. 1).

The thesis of this paper is that, despite the pioneering efforts of CCSSO and other organizations in the U.S., we already risk losing the promise that formative assessment holds for teaching and learning. The core problem lies in the false, but nonetheless widespread, assumption that formative assessment is a particular kind of measurement instrument, rather than a process that is fundamental and indigenous to the practice of teaching and learning. This distinction is critical, not only for understanding how formative assessment functions, but also for realizing its promise for our students and our society.

The paper begins with a description of effective formative assessment and a clarification of some important distinctions that must be maintained if the benefits of formative assessment are to be achieved in our schools. These descriptions and distinctions introduce a brief consideration of the theory and research documenting the effectiveness of formative assessment. Next is discussion of the appropriation of formative assessment in a range of policy

documents. The final section considers the role of formative assessment as part of a larger process of educational change.

Effective Formative Assessment

A major landmark in the emergence of formative assessment as an explicit domain of practice was a synthesis of research findings conducted by Paul Black and Dylan Wiliam in 1998. This synthesis built on prior reviews (Crooks, 1988; Natriello, 1987) and encompassed "diverse bodies of research including studies addressing: teachers' assessment practices, students' self-perception and achievement motivation, classroom discourse practices, quality of assessment tasks and teacher questioning, and the quality of feedback" (Shepard, 2009, p. 32). From their review, Black and Wiliam (1998b) proposed that effective formative assessment involves

- teachers making adjustments to teaching and learning in response to assessment evidence;[1]
- students receiving feedback about their learning with advice on what they can do to improve; and
- students' participation in the process through self-assessment.

They concluded that the student learning gains triggered by formative assessment were amongst the largest ever reported for educational interventions with the largest gains being realized by low achievers (1998b). This was, and remains, a powerful argument for formative assessment.

[1] Black & Wiliam (1998a, 1998b) refer to assessment in the context of formative assessment as all the activities undertaken by teachers and by the students through self-assessment that provide information to be used as feedback to modify the teaching and learning activities in which they are engaged.

Formative Assessment in Current Visions of Assessment Systems

In recent years, formative assessment has received considerable attention in the U.S. The extent of this attention is manifest by its inclusion along with summative and interim assessment in conceptions of "balanced assessment systems" (e.g., Darling-Hammond & Pecheone, 2010; Stiggins, 2006, 2008). As Shepard (2005) has noted, "formal theory about formative assessment was developed in other countries (e.g., Black & Wiliam, 1998a, 1998b; Cowie & Bell, 1999; Sadler, 1989), in part to counter the negative effects of external accountability tests exported by the U.S." (p. 2). Yet, in many quarters in the U.S., formative assessment receives a substantially different interpretation than in the countries where it has become part of established practice to support learning. For example, Perie, Marion and Gong (2009) suggest that in the U.S. many so-called formative assessments are actually interim assessments administered several times each year; and Shepard (2005) refers to the pervasive "misappropriation" of the formative assessment label, cautioning that "it is the use of an instrument, rather than the instrument itself that must be shown, with evidence, to warrant the claim of formative assessment" (Shepard, 2009, p. 33).

Bearing in mind Shepard's caution and Black and Wiliam's criteria for effective formative assessment, it is instructive to look at how formative assessment is treated in the context of next-generation assessment systems. In the consortia proposals, formative assessment is generally included as a component of the assessment system along with summative and interim/benchmark measures. The general gloss on formative assessment is one of instruments that will both inform and improve teachers' instructional planning and student achievement. For example, the Smarter Balanced Assessment Consortium believes that summative assessment is insufficient to drive positive change in teaching and learning, while the Partnership for Assessment of Readiness for College and Careers (PARCC) recognizes that teachers "need additional support to collect evidence of learning to inform instruction, hour by hour, day by day, and week by week" (PARCC, 2010, p. 56). Yet these proposals

tend to be accompanied by suggestions and proposed resource provisions that take the shape of more frequent measures and slide toward a new form of exogenous measurement.

In what will be the new frameworks for future assessment use in the U.S., formative assessment receives a surprisingly narrow treatment. Over 10 years ago Harry Torrance and John Pryor commented that "formative assessment *per se,* as opposed to formative assessment distinguished from summative assessment, has received relatively little attention" (Torrance & Pryor, 1998, p. 14). Current discussions perpetuate a focus on the formative/summative distinction couched as alternative methods of evaluating learning. Lost in this comparison are the distinctive roles and practices of both teachers and students in formative assessment *per se* that render it such a powerful engine for teaching and learning. This is regrettable. The unprecedented amounts of money that will be spent on the development of next-generation systems should surely provide the nation with an opportunity to fully establish formative assessment, not just as a more frequent, finer-grained test (or tool as it is sometimes referred to), but as a practice involving both teachers and students. So what is missing from the conceptions of formative assessment in the next-generation assessment system discussion? A closer look at the theoretical and research base for formative assessment is needed to answer the question.

Theory and Research

Feedback

In his foundational model of formative assessment, D. Royce Sadler identified feedback as the decisive element to assist learning (Sadler, 1989). Beginning from a systems perspective conceptualization of feedback as "information about the gap between the actual level and the reference level of a system parameter that is used to alter the gap in some way" (Ramaprasad, 1983, p. 4), Sadler conceived of formative assessment as a feedback loop to close the gap between the learner's current status and desired goals. He made clear that information itself is not feedback, but only becomes feedback when it is actively used "to alter the gap" (Sadler, 1989, p. 121). In Sadler's model, the teacher

gets feedback from formative assessment evidence and uses the information to make changes in teaching, as well as to provide feedback to the students about how they can improve their own learning.

Feedback designed to improve learning is more effective when it is focused on the task and provides the student with suggestions, hints, or cues, rather than offered in the form of praise or comments about performance (Bangert-Drowns, Kulik, Kulik, & Morgan, 1991; Kluger & DeNisi, 1996). Strengthening the case for the role of effective feedback in the learning process is Hattie and Timperley's recent review of the empirical literature on feedback. In their review of 196 studies describing nearly 7000 effects, Hattie and Timperley reported that feedback had an average effect size of 0.79 standard deviation – an effect greater than student prior cognitive ability, socioeconomic background, and reduced class size (Hattie & Timperley, 2007, p. 83).

Feedback for learning is also salient in the literature on motivation and self-efficacy, notably in Carol Dweck's work. She proposed that there are two views of intelligence: an entity view and an incremental view (Dweck, 1999). People who have an entity view consider intelligence or ability to be fixed and stable. Students with an entity view of intelligence are oriented to performance goals. They want to perform better than others, and they limit themselves to tasks they can succeed in so as to avoid failure. People who have an incremental view of intelligence believe intelligence or ability can be changed. Students with this view of intelligence are focused on learning and mastery as opposed to performance goals. They are interested in learning and meeting challenges and believe that effort, engagement in learning, and strategy development can lead to increased intelligence. By comparison with performance-oriented students, incrementalists are not preoccupied with failure, but instead regard errors as new sources of learning, as opportunities to revise learning strategies so as to be successful. The emphasis on feedback that emerges from formative assessment practices is inherently supportive of an incremental view of learning and the student stance of pro-active self-efficacy associated with it. It also fosters the lifelong skill of

'learning how to learn' that is a prerequisite for success in college and in the workplace.

Sadler's theory similarly places great emphasis on students' capacities to monitor their own learning as, in effect, a separate but complementary feedback process. Sadler (1989) stressed that to be able to monitor their own learning students must come to hold a conception of quality similar to the teacher's, and that developing this conception depends on

- possessing a concept of the *standard* (or goal, or reference level) being aimed for;
- comparing the *actual* (or current) *level of performance* with the standard; and
- engaging in appropriate *action* which leads to some closure of the gap (Sadler, 1989).

In this context, the teacher's role in formative assessment is not simply to use feedback to promote content learning, but also to help students understand the goal being aimed for, assist them to develop the skills to make judgments about their learning in relation to the standard, and establish a repertoire of operational strategies to regulate their own learning. This is an essential feature of formative assessment: if students lack the resources to monitor their own learning and take corrective action, then they remain overwhelmingly dependent on teacher feedback as the primary resource for learning and lack the capacity to develop as self-sustaining lifelong learners.

It is evident that Sadler's foundational view is far from regarding formative assessment as a specific instrument. Instead, formative assessment is conceptualized as a practice and a process centered on the idea of feedback loops in which both teacher and student use information to "alter the gap" so as to further learning.

Interestingly, 20 years after Sadler's theory was published, Sue Brookhart, reflecting on current views and practices of formative assessment in the U.S., lamented that "there is too much emphasis on 'assessment' (tests and assessment, schedules and data reports) and not enough on formation

(learning)" (Brookhart, 2009, p. 1). She went on to make the point that formative assessment is "as much about learning as it is about assessment" (Brookhart, 2009, p. 1). This is a timely reminder. A test-centered perspective that distinguishes between formative and summative assessment inevitably favors a focus on formative assessment as an approach to assessment rather than as an approach to teaching and learning. Such a focus also deflects attention from the understanding of the learning process, and of the roles of teacher and student in that process that are central to the formative assessment perspective. It is to this understanding that we now turn.

The Learning Process

Research from cognitive psychology tells us that learning involves the active construction of schemata in a process in which learners engage with and attempt to make sense of new knowledge and incorporate it into their developing mental structures or schemata (e.g., National Research Council [NRC], 2000; Shepard, 1991; Wertsch, 1985). What distinguishes experts from novices in a domain is that experts have extensive stores of knowledge efficiently organized into well-connected schemata while novices do not (Donovan & Bransford, 2005; NRC, 2000, 2001).

Socio-cultural theories of learning help explain how learners develop their cognitive and language functions. While learning is the property of students, since no one else can learn for them, others can engage with them through social and interactive processes that support learning (Reveles, Kelly, & Durán, 2007; Tharp & Gallimore, 1988). With respect to these processes, Vygotsky's theory of the zone of proximal development has particular relevance (Vygotsky, 1978). Vygotsky viewed learning as a social process in which learners collaborate with more expert others – teachers or peers – to develop cognitive structures that are still in the course of maturing, and which are unlikely to fully mature without interaction with others. In this regard, he distinguished between two levels of development: 1) the level of actual development that the learner has already reached, the level at which the learner is capable of solving problems independently; and 2) the level of potential development (the "zone of proximal

development"), the level that the learner is capable of reaching under the guidance of teachers or in collaboration with peers. The zone of proximal development (ZPD) is the area where learning takes place through a process of "scaffolding" (Rogoff & Gardener, 1984; Wertsch, 1979; Wood, Bruner, & Ross, 1976). Scaffolding occurs when the more expert other provides support through a process of interaction. For example, a teacher asking leading or probing questions to elaborate the knowledge the learner already possesses, or providing feedback that assists the learner to take steps to move forward through the ZPD. As the learner's competence grows, the scaffolding is gradually reduced until the learner is able to function independently (Tharp & Gallimore, 1988).

Connections among Theories and Formative Assessment

Formative assessment merges with cognitive and sociocultural theories of learning in a number of ways. First, from a cognitive perspective, formative assessment enables teachers and students to consistently work in the ZPD, the area where learning takes place. In formative assessment, teachers are involved in a continuous process of evidence gathering and interpretation so as to structure learning that builds on "maturing functions" (Vygotsky, 1978). Teachers need to lead learning, not retrospectively react to it. Only by keeping a very close eye on emerging learning through formative assessment can teachers be prospective, determining what is within the students' reach, and providing them experiences to support and extend learning. Through these experiences students will incorporate new learning into their developing schema.

Second, from a sociocultural perspective, formative assessment takes into account the role of interaction and joint collective action in the learning process. Assessment is not unidirectional, but rather involves both teachers and students in reciprocal activity to move learning forward within a community of practice. This reciprocal activity is characterized by teachers and students engaged together in responding to evidence about learning, minute-by-minute, day-by-day (Leahy, Lyon, Thompson, & Wiliam, 2005), through the provision of scaffolding, including feedback, self-monitoring, and self-regulation on the part of the students.

Finally, also drawing from a sociocultural perspective, formative assessment takes place within a community of practice. The teacher and students – participants in the community – assume roles, goals, practices, and norms for interaction that are intended to support learning (Durán, 2010). Teachers and students assume the roles of partners in the learning process. The goal of the community is the development of learning on the part of all its members. The practices through which this is achieved by the students and the teacher are gathering and interpreting evidence and providing and using feedback. The norms established in the community are mutual support, trust, respect, and collaboration.

These theoretical perspectives go a long way to accounting for why formative assessment as a practice works. The next section includes examples of how they have been implemented.

From Theory to Practice

Several policy level groups from across the world have recently advanced definitions of formative assessment to guide both policy and practice. Three are reviewed in the following sections.

1. Formative Assessment for Students and Teachers (FAST) State Collaborative on Assessment and Student Standards (SCASS)

In October 2006, after an extensive review of the formative assessment literature, consideration of the theories that underlie how it works, and consultation with an advisory board comprising internationally recognized assessment experts, the FAST SCASS adopted the following definition of formative assessment:

> *Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes.*

In a subsequent document, the FAST SCASS developed the ideas inherent in the definition:

> *The primary purpose of the formative assessment process, as conceived in this definition, is to provide evidence that is used by teachers and students to inform instruction and learning during the teaching/learning process. Effective formative assessment involves collecting evidence about how student learning is progressing during the course of instruction so that necessary instructional adjustments can be made to close the gap[2] between students' current understanding and the desired goals. Formative assessment is not an adjunct to teaching but, rather, integrated into instruction and learning with teachers and students receiving frequent feedback.*
>
> *One key feature of this definition is its requirement that formative assessment be regarded as a process rather than a particular kind of assessment. In other words, there is no such thing as "a formative test." Instead, there are a number of formative assessment strategies that can be implemented during classroom instruction. These range from informal observations and conversations to purposefully planned instructionally embedded techniques designed to elicit evidence of student learning to inform and adjust instruction.*
>
> *A second important part of the definition is its unequivocal requirement that the formative assessment process involve both teachers and students. The students must be actively involved in the systematic process intended to improve their learning. The process requires the teacher to share learning goals with students*

[2] The "gap" in formative assessment refers to the distance between the student's current learning status and desired goals (Sadler, 1989). It does not mean "gaps in student learning" in the sense of missing knowledge or skills, or an "achievement gap," that is, differences in performance among sub groups.

and provide opportunities for students to monitor their ongoing progress.

(FAST SCASS, 2008)

2. Third International Conference on Assessment for Learning

In March 2009, participants at the Third International Conference on Assessment for Learning, Dunedin, New Zealand, representing the U.S., Canada, New Zealand, Australia, the United Kingdom, and Europe, developed a position paper on formative assessment (assessment for learning - AFL) in which they included the following definition:

AFL is part of everyday practice by students, teachers, and peers that seeks, reflects upon, and responds to information from dialogue, demonstration, and observation in ways that enhance ongoing learning.

The group provided an elaboration of specific words and phrases used in their definition. For example, *"Everyday practice"* emphasizes the *"interactive, dialogic, contingent relationships of teaching and learning"* and the phrase *"by students, teachers and peers"* deliberately lists students first because AFL should be student-centered. The group also inserts the following caution:

"special assessment tasks and tests can be used formatively, but are not essential; there is a risk of them becoming minisummative assessments."

3. The Assessment Reform Group (ARG)

In 2002 the ARG in the U.K. published a definition and 10 Guiding Principles of assessment for learning:

Assessment for Learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there.

The ARG Guiding Principles also include the provision of feedback and self- and peer-assessment. Another principle of assessment for learning the ARG identified is that it:

> *"…should be regarded as a key professional skill for teachers. Teachers require the professional knowledge and skills to: plan for assessment; observe learning; analyse and interpret evidence of learning; give feedback to learners and support learners in self-assessment. Teachers should be supported in developing these skills through initial and continuing professional development.*

It is important to notice that these conceptualizations and definitions focus on the notion of formative assessment as a process. This view stands in contrast to the view of formative assessment as a test that can be neatly fitted into a "balanced" system of assessments, in which formative instruments are simply finer-grained than other assessments in the system. In fact, it is worth noting that the little research that has been conducted on the use of interim assessment shows no statistical difference in student achievement resulting from their use (e.g., Goertz, Olah, & Riggan, 2009; Henderson, Petrosino, Guckenberg, & Hamilton, 2007). Given this background, the idea that formative assessment is an even more frequent testing regimen is distinctly unappealing as a means of effectively promoting student learning. At the same time a conceptualization of formative assessment as finer-grained or more frequent evaluation subverts its significance by occluding the meaning, nature, and the promise of formative assessment practice.

In addition, the FAST SCASS identified five critical features intended to guide educators toward an effective use of formative assessment: i) learning progressions; ii) learning goals and success criteria; iii) descriptive feedback; iv) self- and peer-assessment; and v) collaboration. A discussion of the theory and research underlying these features follows.

i) Learning Progressions

In their 1998 paper, Black and Wiliam noted that the requirement for teachers to be able to interpret and respond to results in a formative way “is a sound model of students’ progression in the learning of the subject matter, so that the criteria that guide the formative strategy can be matched to students’ trajectories of learning" (Black & Wiliam, 1998, p. 37). A learning progression clearly articulates the trajectory along which students are expected to progress to improve in an area of learning and act as a touchstone for formative assessment (Heritage, 2008).

ii) Learning Goals and Success Criteria

Learning goals and success criteria provide the standard against which evidence is elicited, performance is compared (by both student and teacher), and feedback is generated to close the “gap” between current learning and desired goals. It is important to note here that while a learning progression provides the big picture of learning, learning goals identify what immediate learning is intended within the ZPD. The success criteria are indications to the teacher and the student of the degree to which learning is moving through the ZPD toward independent achievement.

iii) Descriptive Feedback

The FAST SCASS used the term “descriptive” to make clear that the feedback provided in formative assessment is not in the form of a score or a grade. The purpose of feedback is to improve learning while that learning is occurring or evolving. To support learning while it is occurring, teachers must provide descriptive feedback in the form of ideas, strategies, and tasks the student can use to close the “gap” between his or her current learning level and the next level. In this sense, feedback becomes instructional scaffolding in the ZPD.

iv) Self-assessment and Peer-assessment

In addition to the active involvement of students in the process through self-assessment, students are also involved in peer-assessment. To provide feedback, students need to assess the status of an individual peer's learning – or their classmates' learning as a group – against the same success criteria they use to check their own learning.

Peer feedback has a number of advantages both for those students providing the feedback as well as those receiving it. It involves thinking about learning and can deepen students' understanding of their own learning. As Dylan Wiliam observes, "research shows that the people providing the feedback benefit just as much as the recipient, because they are forced to internalize [the] learning intentions and success criteria in the context of someone else's work, which is less emotionally charged than one's own" (Wiliam, 2006, p. 6). The feedback students provide to each other can also be an element of formative assessment for teachers. What students say or write about each other's work can be good evidence of how well they understand the learning goals and success criteria, and the depth of their thinking about the task at hand (Heritage, 2010).

v) Collaboration

The inclusion of collaboration by the FAST SCASS embodies an underlying conception that the classroom context for formative assessment will normally be characterized by joint activity in which, ideally, all participants, both teachers and students, share responsibility for learning. Achieving shared responsibility often requires substantial shifts in the nature of the classroom contract between teachers and students. No longer is the classroom centered on the teacher and the teaching. Students are expected to take responsibility for their own learning, supported by teachers, of course, and by each other.

An important question that emerges from a review of these definitions and elaborations is why, when there appears to be a high degree of consensus in multiple nations about the nature and practice of formative assessment, current discussions which are crucial for next-generation assessment systems do not appear to share these perspectives?

The Measurement Paradigm

Comparatively recently, referring to formative assessment, Lorrie Shepard (2005, p. 2) observed, "Recently, this robust and well-researched knowledge base has made its way back across the oceans, offering great promise for shifting classroom practices toward a culture of learning" (Shepard, 2000; Stiggins, 2002). Yet what is striking in current discussions of next-generation assessment systems is that despite the evident connection between the processes involved in formative assessment, which Black and Wiliam identified in their 1998 review, and learning theory, the predominant paradigm for formative assessment in the U.S. persists as one of measurement – formative assessment, construed within a testing culture, as a test. This is not to say that an instrument cannot be used as a formative assessment – it can – in the sense that the information yielded can provide indications of students' learning status relative to the "gap" that teachers and students can use to make adjustments to learning while that learning is developing. The point here is the relative emphasis given to formative assessment as an instrument. Notwithstanding references in next-generation assessment proposals to "using information formatively" or to "formative processes" the conception of formative assessment expressed is one of an instrument. Absent from this view are notions of consistently working from students' emerging understandings within the ZPD, supporting learning through the instructional scaffolding, including feedback, and the active involvement of students in the assessment/learning process – all of which are hallmarks of effective formative assessment. Instead of considering formative assessment within the context of a measurement paradigm, perhaps we should be focusing on firmly situating the process of formative assessment within a learning paradigm.

A Learning Paradigm

Clearly we need summative assessments to support valid and reliable judgments about how learners are doing relative to the Common Core State Standards. This information can be fed back into the system to make programmatic and curricular decisions, among others. Evidently,

interim/benchmark assessments are gaining ground in the terms of their perceived, though empirically undocumented, significance for increasing achievement. However, simply treating formative assessment as a series of more frequent mini-assessments misses the point about its value to learning – a value that is rooted in theory and research. At a time of unprecedented opportunity, it is regrettable that roles of the teacher and the student in enabling learning are not at the center of current thinking about formative assessment within the proposed next-generation assessment systems. This may well result in a lost opportunity to firmly situate formative assessment in the practices of U.S. teachers. So what to do?

One course of action would be to redress the balance from formative assessment as an instrument toward formative assessment as a process for enabling learning by channeling the investment into teachers rather than tools. This means investing in the development of teacher knowledge and skills needed to engage in the process of formative assessment (Heritage, 2007, 2010; Heritage & Niemi, 2006). This outlook is clearly summed up in the ARG's guiding principle that formative assessment be viewed as a key professional skill for teachers. The assessment system would include summative measures, but reserve formative assessment as the means "to enable learning and its ongoing social support as classroom cultural practice and not just to provide close-in snapshots of whether students have learned what was targeted for learning" (Durán, 2010, p. 3). So doing will require significant and fundamental changes in assessment and teaching practices. The following teacher's comments are emblematic of the kind of changes that result from implementing formative assessment as a process, and of the kind change we need to see in our classrooms:

Shawn: *"I used to do a lot of explaining, but now I do a lot of questioning.*

I used to do a lot of talking, but now I do a lot of listening.

I use to think about teaching the curriculum, but now I think about teaching the student."

(Shawn's emphases) (Heritage, 2010, p. 4).

As these comments from Shawn make clear, the fundamental significance of formative assessment is not to be construed in terms of measurement per se. Rather, it should be thought of as an integral part of a wider process of instructional reform in which the relationship between teacher and student and between both of them and the curriculum is reconstructed in a more active and directly participatory modality. This involves teaching practices that guide and enable learning instead of simply delivering content. Moving forward presents two main challenges. First, developing education and training programs that enskill and refresh the formative assessment capacities of the existing teaching force as well as those in pre-service education. Second, appropriating resources from the state to the classroom to facilitate and incent the implementation of formative assessment practices.

The Race to the Top Assessment Program offers an unprecedented opportunity to initiate major changes in teaching and learning practices in the United States. Implementation of formative assessment practices in American classrooms will necessitate sustained effort, and will require many teachers to make significant changes. We know that teacher change can be supported over time with systematic and consistent professional development. Some states have already begun along this path and it is to be hoped that others will follow. If we believe the decades of research and theory that underpin the practice and process of formative assessment, we need to begin this journey. Without a clear recognition of the nature of formative assessment and its promise for improving learning, we risk losing the present historic opportunity to better serve our students, their teachers, and the future of the nation.

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